ALMÁSFÜZITŐ: AN INDEX

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GREENPEACE

Loughborough University

Pond 7, Almásfüzitő Aluminium Factory & site of the TATAI Waste Disposal Operation.
Image courtesy of ESRI, 2014

INTRODUCTION

Built during the Soviet Occupation of Hungary in 1950, the Almásfüzitő Aluminum Factory operated until as recently as 1997. Using archaic manufacturing and storage technologies that are regarded as "absolutely unsuitable today"[1], the plant deposited some 12 million tons of red mud, an industrial by-product from the process of refining bauxite ore into aluminium, into vast ponds at the Danube's edge. Historically, the seven alumina ponds at Almásfüzitő were created without the provision of a sealed base. Worse still, the area is prone to seismic activity and tidal fluctuations. Rather than safely housing the red mud, the unsuitable nature of the Ponds' structure ensures that 'red springs' leak into the groundwater reserves on the Danube's banks. In 2010 alone, it has been calculated that 405, 384m^3 of water and toxins leached through the soil into the Danube.

Red Mud has an alkalinity of pH12 and contains highly poisonous metals such as arsenic and mercury. It is evident from the disaster in Devecser, Hungary 2010, that red mud can cause severe caustic burns to skin and have a catastrophic effect on ecosystems, especially marine life. The Almásfüzitő ponds lie directly adjacent to the banks of the Danube, an area that has been designated by the EU as being a Natura 2000 site – a protected zone for wildlife. It therefore follows that the pollutants emanating from the Almásfüzitő ponds, and into the Danube, represent a significant threat to the river's ecology and also the human food chain in all countries down-stream from Almásfüzitő.

If this situation was not worrying enough, in April 2011 the Hungarian Environmental Protection Authority granted a company, named as TATAI, a license to blend 166 toxic wastes and a further 244 non-toxic wastes into the red mud of Pond 7, with the mere addition of some topsoil. The amount of waste granted by the license totals 132,000 tons/pa and equates to a daily average of 360 tons per day. Independent and verified scientific tests have shown that this method of waste disposal, known as *composting*, is "wholly inappropriate" [(ibid.)] for the great majority of non-organic wastes permitted, which do not biodegrade. Consequently, the operation at Almásfüzitő would *seem* to contravene both Hungarian and EU law regulating the disposal of industrial wastes.

This publication is a protest against the environmental 'crimes' and needless pollution taking place at Almásfüzitő, in the name of profit and greed. The text which follows has been lifted from TATAI's licence, granted by the Hungarian Environmental Protection Authority. The purpose of the text is to illustrate the astonishing variety of toxins which the company are "legally" entitled to 'compost' into the earthen prisms at Pond 7.

The codes listed in the following text are standardised across the EU. As a guide two digit codes, such as 01, are waste category headings. Four digit codes, such as 01 04, refer to category subheadings. Six digit codes, such as 01 04 11, signify the individual categories of waste permitted in the licence. Furthermore, codes with an * refer to wastes which are deemed to be toxic. At Almásfüzitő the toxic and non-toxic wastes can mix and react together with unpredicatble results. The author has therefore decided to make no distinction between the various categories of waste. The continuous stream of the text is therefore analogous to the flow of pollutants which leach into the Danube each and every day.

[1] All facts and figures in this passage are the product of an independent scientific review commisioned by Greenpeace, Hungary. The report was written by Prof. Karl Lorber, who Heads the Institute for Sustainable Waste Management and Technology (IAE), in Austria. Professor Lorber's expert findings, concerning waste disposal at Almásfüzitő, can be found by using the QR code:

Or by visiting the web address:
http://greenpeace.hu/up_files/131920028513185170 72Lorber_szakvelemeny_angol_20111013.pdf

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In May 2012, 20 individuals across Europe with a professional interest in the toxic waste dumping occuring at Almásfüzitő, were sent a copy of *Almásfüzitő: An Index*. Accompanying each parcel was a sheet of paper containing a list of all the recipients; here the individual concerned would also find their name circled in red.

Each parcel was tracked and required a signature upon delivery. All parcels reached their targeted addresses with the exception of one parcel, which was returned unopened.

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10 03 27* wastes from cooling-water treatment containing oil 10 03 28 wastes from cooling-water treatment other than those mentioned in 10 03 27. 10 03 29* waste from treatment of salt slags and black drosses containing dangerous substances 10 03 30 wastes from treatment of salt slags and black drosses other than those mentioned in 10 03 29. 10 03 99 wastes not otherwise specified **10 04 WASTES FROM LEAD THERMAL METALLURGY** 10 04 09* wastes from cooling-water treatment containing oil 10 04 10 waste from cooling-water treatment other than those mentioned in 10 04 09. **10 06 WASTES FROM COPPER THERMAL METALLURGY** 10 06 09* wastes from cooling-water treatment containing oil 10 06 10 waste from cooling-water treatment other than those mentioned in 10 06 09. **10 07 WASTES FROM SILVER, GOLD AND PLATINUM THERMAL METALURGY** 10 07 07* wastes from cooling-water treatment containing oil 10 07 08 wastes from cooling-water treatment other than those mentioned in 10 07 07. **10 08 WASTES FROM OTHER NON-FEROUS THERMAL METALLURGY** 10 08 19* wastes from cooling-water treatment containing oil 10 08 20 wastes from cooling-water treatment other than those mentioned in 10 08 19.**10 09 WASTES FROM CASTING OF FERROUS PIECES** 10 09 03 furnace slag 10 09 05* casting cores and moulds which have not undergone pouring containing dangerous substances 10 09 06 casting cores and moulds which have not undergone pouring other than those mentioned in 10 09 05. 10 09 07* casting cores and moulds which have undergone pouring containing dangerous substances 10 09 08 casting cores and moulds have undergone pouring other than those mentioned in 10 09 07. 10 09 11* other particulates containing dangerous substances 10 09 12 other particulates other than those mentioned in 10 09 11. 10 09 99 wastes not otherwise specified **10 10 WASTES FROM CASTING OF NON-FERROUS PIECES** 10 10 03 furnace slag 10 10 06 casting cores and moulds which have not undergone pouring, other than those mentioned in 10 10 05. 10 10 07* casting cores and moulds which have undergone pouring, containing dangerous substances 10 10 08 casting cores and moulds which have undergone pouring, other than those mentioned in 10 10 07. 10 10 11* other particulates containing dangerous substances 10 10 12 other particulates other than those mentioned in 10 10 11. 10 10 13* waste binders containing dangerous substances 10 10 14 waste binders other than those mentioned in 10 10 13. 10 10 15* waste crack-indicating agent containing dangerous substances 10 10 16 waste crack-indicating agent other than those mentioned in 10 10 15. 10 10 99 wastes not otherwise specified **10 11 WASTES FROM MANUFACTURE OF GLASS AND GLASS PRODUCTS** 10 11 03 waste glass-based fibrous materials 10 11 11* waste glass in small particles and glass powder containing heavy metals (for example from cathode ray tubes) 10 11 12 waste glass other than those mentioned in 10 11 11. 10 11 13* glass-polishing and grinding sludge containing dangerous substances 10 11 14 glass-polishing and grinding sludge other than those mentioned in 10 11 13. 10 11 15* solid wastes from flue-gas treatment containing dangerous substances

10 11 16 solid wastes from flue-gas treatment other than those mentioned in 10 11 15. 10 11 17* sludges and filter cakes from flue-gas treatment containing dangerous substances 10 11 18 sludges and filter cakes from flue-gas treatment other than those mentioned in 10 11 17. 10 11 19* solid wastes from on-site effluent treatment containing dangerous substances 10 11 20 solid wastes from on-site effluent treatment other than those mentioned in 10 11 19. 10 11 99 wastes not otherwise specified **10 12 WASTES FROM MANUFACTURE OF CERAMIC GOODS, BRICKS, TILES AND CONSTRUCTION PRODUCTS** 10 12 11* wastes from glazing containing heavy metals 10 12 12 wastes from glazing other than those mentioned in 10 12 11. 10 12 13 sludge from on-site effluent treatment 10 12 99 wastes not otherwise specified **11 WASTES FROM CHEMICAL SURFACE TREATMENT AND COATING OF METALS AND OTHER MATERIALS; NON-FERROUS HYDRO-METALLURGY 11 01 WASTES FROM CHEMICAL SURFACE TREATMENT AND COATING OF METALS AND OTHER MATERIALS (FOR EXAMPLE GALVANIC PROCESSES, ZINC COATING PROCESSES, PICKLING PROCESSES, ETCHING, PHOSPHATING, ALKALINE DEGREASING, ANODISING)** 11 01 08* phosphatising sludges 11 01 09* sludges and filter cakes containing dangerous substances 11 01 10 sludges and filter cakes other than those mentioned in 11 01 09. 11 01 13* degreasing wastes containing dangerous substances 11 01 14 degreasing wastes other than those mentioned in 11 01 13. **12 WASTES FROM SHAPING AND PHYSICAL AND MECHANICAL SURFACE TREATMENT OF METALS AND PLASTICS 12 01 WASTES FROM SHAPING AND PHYSICAL AND MECHANICAL SURFACE TREATMENT OF METALS AND PLASTICS** 12 01 02 ferrous metal dust and particles 12 01 07* mineral-based machining oils free of halogens (except emulsions and solutions) 12 01 09* machining emulsions and solutions free of halogens 12 01 12* spent waxes and fats 12 01 14* machining sludges containing dangerous substances 12 01 15 machining sludges other than those mentioned in 12 01 14. 12 01 16* waste blasting material containing dangerous substances 12 01 17 waste blasting material other than those mentioned in 12 01 16. 12 01 18* metal sludge (grinding, honing and lapping sludge) 12 01 19* readily biodegradable machining oil 12 01 99 wastes not otherwise specified 12 03 **WASTES FROM WATER AND STEAM DEGREASING PROCESSES (EXCEPT 11)** 12 03 02* steam degreasing wastes 13 **OIL WASTES AND WASTES OF LIQUID FUELS (except edible oils, and those in chapters 05, 12 and 19) 13 01 WASTE HYDRAULIC OILS** 13 01 04* chlorinated emulsions 13 01 05* non-chlorinated emulsions 13 01 09* mineral-based chlorinated hydraulic oils 13 01 10* mineral-based non-chlorinated hydraulic oils 13 01 12* readily biodegradable hydraulic oils 13 01 13* other hydraulic oils 13 02 **WASTE ENGINE, GEAR AND LUBRICATING OILS** 13 02 07* readily biodegradable engine, gear and lubricating oils 13 02 08* other engine, gear and lubricating oils

13 03 **WASTE INSULATING AND HEAT TRANSMISSION OILS** 13 03 09* readily biodegradable insulating and heat transmission oils 13 04 **BILGE OILS** 13 04 01* bilge oils from inland 13 04 02* bilge oils from jetty sewers 13 04 03* bilge oils from other navigation 13 05 **OIL/WATER SEPARATOR CONTENTS** 13 05 01* solids from grit chambers and oil/water separators 13 05 02* sludges from oil/water separators 13 05 03* interceptor sludges 13 05 06* oil from oil/water separators 13 05 07* oily water from oil/water separators 13 05 08* mixtures of wastes from grit chambers and oil/water separators 13 08 **OIL WASTES NOT OTHERWISE SPECIFIED** 13 08 01* desalter sludges or emulsions 13 08 02* other emulsions 13 08 99* wastes not otherwise specified 15 **WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED** 15 01 **PACKAGING (INCLUDING SEPARATELY COLLECTED MUNICIPAL PACKAGING WASTE)** 15 01 01 paper and cardboard packaging 15 01 03 wooden packaging 15 01 06 mixed packaging 15 01 09 textile packaging 15 01 10* packaging containing residues of or contaminated by dangerous substances 15 02 **ABSORBENTS, FILTER MATERIALS, WIPING CLOTHS AND PROTECTIVE CLOTHING** 15 02 02* absorbents, filter materials (including oil filters not otherwise specified), wiping cloths, protective clothing contaminated by dangerous substances 15 02 03 absorbents, filter materials, wiping cloths and protective clothing other than those mentioned in 15 02 02. 16 **WASTES NOT OTHERWISE SPECIFIED IN THE LIST** 16 03 **OFF-SPECIFICATION BATCHES AND UNUSED PRODUCTS** 16 03 05* organic wastes containing dangerous substances 16 03 06 organic wastes other than those mentioned in 16 03 05. 16 07 **WASTES FROM TRANSPORT TANK, STORAGE TANK AND BARREL CLEANING (EXCEPT 05 AND 13)** 16 07 08* wastes containing oil 16 07 09* wastes containing other dangerous substances 16 07 99 wastes not otherwise specified 16 08 **SPENT CATALYSTS** 16 08 03 spent catalysts containing transition metals or transition metal compounds not otherwise specified 16 08 04 spent fluid catalytic cracking catalysts (except 16 08 07). 16 08 05* spent catalysts containing phosphoric acid 16 08 07* spent catalysts contaminated with dangerous substances 16 10 **AQUEOUS LIQUID WASTES DESTINED FOR OFF-SITE TREATMENT** 16 10 01* aqueous liquid wastes containing dangerous substances 16 10 02 aqueous liquid wastes other than those mentioned in 16 10 01. 17 **CONSTRUCTION AND DEMOLITION WASTES (INCLUDING EXCAVATED SOIL FROM CONTAMINATED SITES)** 17 01 **CONCRETE, BRICKS, TILES AND CERAMICS** 17 01 06* mixtures of, or separate fractions of concrete, bricks, tiles and ceramics containing dangerous substances 17 01 07 mixture of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06. 17 02 **WOOD, GLASS AND PLASTIC** 17 02 04* glass, plastic and wood containing or contaminated with dangerous substances 17 03 **BITUMINOUS MIXTURES, COAL TAR AND TARRED PRODUCTS** 17 03 01* bituminous mixtures containing coal tar 17 03 02 bituminous mixtures containing other than those mentioned in 17 03 01. 17 03 03* coal tar and tarred products

17 05 SOIL **(INCLUDING EXCAVATED SOIL FROM CONTAMINATED SITES), STONES AND DREDGING SPOIL** 17 05 03* soil and stones containing dangerous substances 17 05 04 soil and stones other than those mentioned in 17 05 03. 17 05 05* dredging spoil containing dangerous substances 17 05 06 dredging spoil other than those mentioned 17 05 05. 17 05 07* track ballast containing dangerous substances 17 05 08 track ballast other than those mentioned in 17 05 07. 17 09 **OTHER CONSTRUCTION AND DEMOLITION WASTE** 17 09 03* other construction and demolition wastes (including mixed wastes) containing dangerous substances 19 **WASTES FROM WASTE MANAGEMENT FACILITIES, OFF-SITE WASTE WATER TREATMENT PLANTS AND THE PREPARATION OF WATER INTENDED FOR HUMAN CONSUMPTION AND WATER FOR INDUSTRIAL USE** 19 01 **WASTES FROM INCINERATION OR PYROLYSIS OF WASTE** 19 01 06* aqueous liquid wastes from gas treatment and other aqueous liquid wastes 19 01 07* solid wastes from gas treatment 19 01 10* spent activated carbon from flue-gas treatment 19 01 11* bottom ash and slag containing dangerous substances 19 01 12 bottom ash and slag other than those mentioned in 19 01 11. 19 01 13* fly ash containing dangerous substances 19 01 14 fly ash other than those mentioned in 19 01 13. 19 01 15* boiler dust containing dangerous substances 19 01 16 boiler dust other than those mentioned in 19 01 15. 19 01 17* pyrolysis wastes containing dangerous substances 19 01 18 pyrolysis wastes other than those mentioned in 19 01 17. 19 01 19 sands from fluidised beds 19 01 99 wastes not otherwise specified 19 02 **WASTES FROM PHYSICO/CHEMICAL TREATMENTS OF WASTE (INCLUDING DECHROMATATION, DECYANIDATION, NEUTRALISATION)** 19 02 03 premixed wastes composed only of non-hazardous wastes 19 02 04* premixed wastes composed of at least one hazardous waste 19 02 05* sludges from physico/chemical treatment containing dangerous substances 19 02 06 sludges from physico/chemical treatment other than those mentioned in 19 02 05. 19 02 07* oil and concentrates from separation 19 02 11* other wastes containing dangerous substances 19 02 99 wastes not otherwise specified 19 03 **STABILISED/SOLIDIFIED WASTES (19)** 19 03 04* wastes marked as hazardous, partly stabilised 19 03 05 stabilised wastes other than those mentioned in 19 03 04. 19 03 06* wastes marked as hazardous, solidified 19 03 07 solidified wastes other than those mentioned in 19 03 06. 19 04 **VITRIFIED WASTE AND WASTES FROM VITRIFICATION** 19 04 02* fly ash and other flue-gas treatment wastes 19 05 **WASTES FROM AEROBIC TREATMENT OF SOLID WASTES** 19 05 03 off-specification compost 19 05 99 wastes not otherwise specified 19 06 **WASTES FROM ANAEROBIC TREATMENT OF WASTE** 19 06 03 liquor from anaerobic treatment of municipal waste 19 06 04 digestate from anaerobic treatment of municipal waste 19 06 05 liquor from anaerobic treatment of animal and vegetable waste 19 06 06 digestate from anaerobic treatment of animal and vegetable waste 19 06 99 wastes not otherwise specified 19 08 **WASTES FROM WASTE WATER TREATMENT PLANTS NOT OTHERWISE SPECIFIED** 19 08 01 screenings 19 08 02 waste from desanding 19 08 05 sludges from treatment of urban waste water 19 08 06* saturated or spent ion exchange resins 19 08 07* solutions and sludges from regeneration of ion exchangers

19 08 08* membrane system waste containing heavy metals 19 08 09 grease and oil mixture from oil/water separation containing only edible oil and fats 19 08 10* grease and oil mixture from oil/water separation other than those mentioned in 19 08 10. 19 08 11* sludges containing dangerous substances from biological treatment of industrial waste water 19 08 12 sludges from biological treatment of industrial waste water other than those mentioned in 19 08 11. 19 08 13* sludges containing dangerous substances from other treatment of industrial waste water 19 08 14 sludges from other treatment of industrial waste water other than those mentioned in 19 08 13. 19 08 99 wastes not otherwise specified **19 09 WASTES FROM THE PREPARATION OF WATER INTENDED FOR HUMAN CONSUMPTION OR WATER FOR INDUSTRIAL USE** 19 09 01 solid waste from primary filtration and screenings 19 09 02 sludges from water clarification 19 09 03 sludges from decarbonation 19 09 04 spent activated carbon 19 09 05 saturated or spent ion exchange resins 19 09 06 solutions and sludges from regeneration of ion exchangers 19 09 99 wastes not otherwise specified **19 11 WASTES FROM OIL REGENERATION** 19 11 01* spent filter clays 19 11 02* acid tars 19 11 03* aqueous liquid wastes 19 11 05* sludges from on-site effluent treatment containing dangerous substances 19 11 06 sludges from on-site effluent treatment other than those mentioned in 19 11 05. 19 11 07* wastes from flue-gas cleaning 19 11 99 wastes not otherwise specified **19 12 WASTES FROM THE MECHANICAL TREATMENT OF WASTE (FOR EXAMPLE SORTING, CRUSHING, COMPACTING, PELLETISING) NOT OTHERWISE SPECIFIED** 19 12 06* wood containing dangerous substances 19 12 07 wood other than that mentioned in 19 12 06. 19 12 08 textiles 19 12 09 minerals (for example sand, stones) 19 12 11* other wastes (including mixtures of materials) from mechanical treatment of waste containing dangerous substances **19 13 WASTES FROM SOIL AND GROUNDWATER REMEDIATION** 19 13 01* solid wastes from soil remediation containing dangerous substances 19 13 02 solid wastes from soil remediation other than those mentioned in 19 13 01. 19 13 03* sludges from soil remediation containing dangerous substances 19 13 04 sludges from soil remediation other than those mentioned in 19 13 03. 19 13 05* sludges from groundwater remediation containing dangerous substances 19 13 06 sludges from groundwater remediation other than those mentioned in 19 13 05. **20 MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS 20 01 SEPARATELY COLLECTED FRACTIONS (EXCEPT 15 01)** 20 01 08 biodegradable kitchen and canteen waste 20 01 25 edible oil and fat 20 01 26* oil and fat other than those mentioned in 20 01 25. 20 01 29* detergents containing dangerous substances 20 01 30 detergents other than those mentioned in 20 01 29. 20 01 37* wood containing dangerous substances 20 01 38 wood other than that mentioned in 20 01 37. 20 01 41 wastes from chimney sweeping 20 01 99 other fractions not otherwise specified 20 02 **GARDEN AND PARK WASTES (INCLUDING CEMETERY WASTE)** 20 03 01 mixed municipal waste 20 03 02 waste from markets 20 03 03 street-cleaning residues 20 03 04 septic tank sludge 20 03 06 waste from sewage cleaning.

THE OUTCOME

DILUTION OF POLLUTION IS NO SOLUTION

GREENPEACE PRESS RELEASE

Hazardous waste management at Almásfüzitő breaches EU law

Budapest, 22 November 2013 – Based on the initiation of Greenpeace Hungary, the European Commission announced yesterday that they have opened infringement proceedings against Hungary because of the waste management at the Almásfüzitő red sludge reservoir. Greenpeace welcomes this decision. Since all Hungarian authorities refused to act, Greenpeace had no other choice than asking Brussels to help defend the Hungarian environment and the Danube.

At the village of Almásfüzitő, right next to the Danube bank, the Hungarian company Tatai Környezetvédelmi Zrt.(TKV) has been receiving permits for more than 20 years to cover the red mud with a mix of hundreds of thousand tons of hazardous and other wastes. Ironically, this waste treatment was labelled as "composting", even though large parts of the hazardous waste are of inorganic nature: at best, it is waste dilution by mixing. The reservoir is bordering a Natura 2000 protected Danube bank area. The company has not succeeded over that 20 years in covering the entire 163 ha surface of the red mud.

Greenpeace's waste management expert stated that no real composting processes take place in the reservoir. Mixing more than 160 different kinds of hazardous wastes – including wastes with heavy metals –, and depositing them to an improperly sealed reservoir significantly increases the environmental risks. It is obvious that in the long term, the deposited toxic substances will end up in the environment, in the ground water and in the Danube.

Greenpeace started its campaign in 2011 against this serious environmental threat. During the past years, several Hungarian authorities have been asked to act against this law-breaching activity. Since the national authorities had refused to act, Greenpeace initiated an EU infringement at the European Commission in January 2012.

"All waste management activity shall fulfill EU and Hungarian legislation on environmental and health protection. We believe that the activity of TKV violates several laws. Their permit, issued in 2010, seriously infringes the EU and domestic legal requirements related to Natura 2000 sites by failing to examine the likely significant effects. Furthermore, the permit does not comply with the requirements of hazardous waste management. We believe that the Commission's decision on the infringement justifies our concerns", said Gergely Simon, regional toxic expert of Greenpeace CEE.

Zsolt Szegfalvi, director of Greenpeace Hungary, added: "Greenpeace expects that as a consequence of the infringement procedure, Hungarian authorities will suspend the dangerous activities at the Almásfüzitő reservoir, so the Commission will be able to close down the procedure."